

NEW MEXICO ENVIRONMENT DEPARTMENT

Harold Runnels Building 1190 South St. Francis Drive (87505) P.O. Box 5469, Santa Fe, NM 87502-5469 Phone (505) 827-0187 Fax (505) 827-0160 www.env.nm.gov



BUTCH TONGATE Cabinet Secretary

J. C. BORREGO Deputy Secretary

Certified Mail - Return Receipt Requested

May 1, 2018

Mr. Rick Carpenter Interim Director 341 Caja del Rio Road Santa Fe, NM 87506

Re: Buckman Direct Diversion Project; Major Industrial; SIC 4941; NPDES Compliance Evaluation Inspection; NPDES # NM0030848; April 3, 2018

Dear Mr. Carpenter:

Enclosed please find a copy of the report and check list for the referenced inspection that the New Mexico Environment Department (NMED) conducted at your facility on behalf of the U.S. Environmental Protection Agency (USEPA). This inspection report will be sent to the USEPA in Dallas for their review. These inspections are used by USEPA to determine compliance with the National Pollutant Discharge Elimination System (NPDES) permitting program in accordance with requirements of the federal Clean Water Act.

Further explanations and problems noted during this inspection are discussed on the completed form and checklist of this inspection report. Introduction, treatment scheme, and problems noted during this inspection are discussed in the "Further Explanations" section of the inspection report.

You are encouraged to review the inspection report, required to correct any problems noted during the inspection, and advised to modify your operational and/or administrative procedures, as appropriate. If you have comments on or concerns with the basis for the findings in the NMED inspection report, please contact us (see the address below) in writing within 30 days from the date of this letter. Further, you are encouraged to notify in writing both the USEPA and NMED regarding modifications and compliance schedules at the addresses below:

NPDES Enforcement Coordinator Environmental Protection Agency, Region 6 NPDES Enforcement Branch (6EN-WM) 1445 Ross Avenue, Suite 1200 Dallas, Texas 75202-2733 Program Manager New Mexico Environment Department Surface Water Quality Bureau (N2050) Point Source Regulation Section P.O. Box 5469 Santa Fe, New Mexico 87502 Buckman Direct Diversion Project, NPDES # NM0030848 May 1, 2018 Page 2 of 2

David Long (Long.David@epa.gov) is USEPA Region 6's Acting NPDES Enforcement Coordinator at the above address. If you have any questions about this inspection report, please contact Jennifer Foote at (505)827-0596 or at Jennifer.Foote@state.nm.us.

Sincerely,

/s/ Sarah Holcomb

Sarah Holcomb Program Manager Point Source Regulation Section Surface Water Quality Bureau

cc: Carol Peters-Wagnon, USEPA (6EN-WM) by e-mail David Long, USEPA (6EN-WM) by e-mail Nancy Williams, USEPA (6EN-WC) by e-mail Amy Andrews, USEPA (6EN-WM) by e-mail David Esparza, USEPA (6EN-WM) by e-mail Brent Larsen, USEPA (6WQ-PP)
Robert Italiano, NMED District II by e-mail Daniela Bowman, BDD by e-mail Charles Vokes, BDD by e-mail

Form Approved OMB No. 2040-0003 Approval Expires 7-31-85



NPDES Compliance Inspection Report

	Section A: National Data System Coding																
Transaction Code NPDES yr/mo/day Inspec. Type Inspector Fac Type																	
1	N 2 5 3 N M	0 (3 0 8	4 8 11	12 D	1	8 0	4	0	3	17	18	C	19	S	20	1
	M A J O R	ı l	N D U S	T R I	Remar A	L											Ш
_	Inspection Work Days Facility Evaluation Rating BI QA						Reserved										
	67 69 70 4 71 N 72 N 73 74 75									80							
	Section B: Facility Data																
POT BUC	te and Location of Facility Inspected (W name and NPDES permit number) KMAN DIRECT DIVERSION –F to NM-599 frontage road heading so	om H	wy 599 Take exit 6 S N	Meadows Rd, take	the tra			Fime /Dapm 4/3/					Permit 9-1-1	Effecti 4	ve Date	e	
DEL	RIO ROAD AND FOLLOW 3.5 mil					RN		ime/Date om 4/3/1					Permit 8-31-	Expira 19	tion Da	ite	
	e(s) of On-Site Representative(s)/Titlurles Vokes, BDD Facilities Manager)								Oth	er Facilit	y Data			
Dani	ela Bowman, BDD Regulatory Comp Portillo, (505) 955-4505												T N. 35° : NG W1				
Nan	ne, Address of Responsible Official/T	itle/Pho	one and Fax Number									SIC	4941				
	Rick Carpenter/ Interim Director/955- CAJA DEL RIO ROAD, SANTA FE.		7507				Yes	Cor	No	d x]						
				ction C: Areas E ory, M = Marginal					Evalu	ıated)							
S	Permit	S	Flow Measuremen	t	S	Оре	erations	& Main	tenan	ice		N	CSO/SS	0			
S	Records/Reports	M	Self-Monitoring I	Program	N	Slu	dge Han	dling/D	isposa	al		N	Pollution Prevention				
S	Facility Site Review	N	Compliance Sched	lules	N	İ	etreatm				ŀ	N	Multim	edia			
S	Effluent/Receiving Waters	S	Laboratory	N Storm Water N		Other:											
Soo	Section D: Summary of Findings/Comments (Attach additional sheets if necessary)																
Sec	See attached sheets for further details.																
Nan	ne(s) and Signature(s) of Inspector	s)		Agency/Office/	Teleph	one/F	ax						Date				
Jenn	ifer Foote /s/ Jennifer Foote			NMED/SWQB	505-82	27-059	96						4/30/1	8			
													L				
Sign	ature of Management QA Review	r		Agency/Office				ibers					Date				
Sara	h Holcomb, Program Manager	/s/ Sa	rah Holcomb	NMED/SWQB	505-82	27-279	Sarah Holcomb, Program Manager /s/ Sarah Holcomb NMED/SWQB 505-827-2798 4/30/18						· · · · · ·				

SECTION A - PERMIT VERIFICATION		
PERMIT SATISFACTORILY ADDRESSES OBSERVATIONS DETAILS:	⊠ S □ M □ U □ NA (FURT	THER EXPLANATION ATTACHED <u>NO</u>)
1. CORRECT NAME AND MAILING ADDRESS OF PERMITTEE		\boxtimes Y \square N \square NA
2. NOTIFICATION GIVEN TO EPA/STATE OF NEW DIFFERENT OR INCREASED D	DISCHARGES	□ Y □ N ⊠ NA
3. NUMBER AND LOCATION OF DISCHARGE POINTS AS DESCRIBED IN PERMI	Т	\boxtimes Y \square N \square NA
4. ALL DISCHARGES ARE PERMITTED		⊠ Y □ N □ NA
SECTION B - RECORDKEEPING AND REPORTING EVALUATION		
RECORDS AND REPORTS MAINTAINED AS REQUIRED BY PERMIT. DETAILS:.	\boxtimes S \square M \square U \square NA (FUR	THER EXPLANATION ATTACHED <u>Yes</u>
1. ANALYTICAL RESULTS CONSISTENT WITH DATA REPORTED ON DMRs.		\boxtimes Y \square N \square NA
2. SAMPLING AND ANALYSES DATA ADEQUATE AND INCLUDE.		\boxtimes S \square M \square U \square NA
a) DATES, TIME(S) AND LOCATION(S) OF SAMPLING		\boxtimes Y \square N \square NA
b) NAME OF INDIVIDUAL PERFORMING SAMPLING		\boxtimes Y \square N \square NA
c) ANALYTICAL METHODS AND TECHNIQUES.		\boxtimes Y \square N \square NA
d) RESULTS OF ANALYSES AND CALIBRATIONS.		⊠Y□N □NA
e) DATES AND TIMES OF ANALYSES.		\boxtimes Y \square N \square NA
f) NAME OF PERSON(S) PERFORMING ANALYSES.		⊠Y□N □NA
3. LABORATORY EQUIPMENT CALIBRATION AND MAINTENANCE RECORDS A	ADEQUATE.	\boxtimes S \square M \square U \square NA
4. PLANT RECORDS INCLUDE SCHEDULES, DATES OF EQUIPMENT MAINTENA	ANCE AND REPAIR	\boxtimes S \square M \square U \square NA
5. EFFLUENT LOADINGS CALCULATED USING DAILY EFFLUENT FLOW AND D	DAILY ANALYTICAL DATA.	\square Y \square N \boxtimes NA
SECTION C - OPERATIONS AND MAINTENANCE		
TREATMENT FACILITY PROPERLY OPERATED AND MAINTAINED. DETAILS:	⊠ S □ M □ U □ NA (FUR	THER EXPLANATION ATTACHED <u>No</u>)
1. TREATMENT UNITS PROPERLY OPERATED.		\boxtimes S \square M \square U \square NA
2. TREATMENT UNITS PROPERLY MAINTAINED.		\boxtimes S \square M \square U \square NA
3. STANDBY POWER OR OTHER EQUIVALENT PROVIDED.		\boxtimes S \square M \square U \square NA
4. ADEQUATE ALARM SYSTEM FOR POWER OR EQUIPMENT FAILURES AVAIL	ABLE.	\boxtimes S \square M \square U \square NA
5. ALL NEEDED TREATMENT UNITS IN SERVICE.		\boxtimes S \square M \square U \square NA
6. ADEQUATE NUMBER OF QUALIFIED OPERATORS PROVIDED.		\boxtimes S \square M \square U \square NA
7. SPARE PARTS AND SUPPLIES INVENTORY MAINTAINED.		\boxtimes S \square M \square U \square NA
8. OPERATION AND MAINTENANCE MANUAL AVAILABLE. STANDARD OPERATING PROCEDURES AND SCHEDULES ESTABLISHED.		\boxtimes Y \square N \square NA \boxtimes Y \square N \square NA
PROCEDURES FOR EMERGENCY TREATMENT CONTROL ESTABLISHED.		\boxtimes Y \square N \square NA

SECTION C - OPERATIONS AND MAINTENANCE (CONT'D)	
9. HAVE BYPASSES/OVERFLOWS OCCURRED AT THE PLANT OR IN THE COLLECTION SYSTEM IN THE LAST YEAR? IF SO, HAS THE REGULATORY AGENCY BEEN NOTIFIED? HAS CORRECTIVE ACTION BEEN TAKEN TO PREVENT ADDITIONAL BYPASSES/OVERFLOWS?	□ Y □ N ⊠ NA □ Y □ N ⊠ NA □ Y □ N ⊠ NA
10.HAVE ANY HYDRAULIC OVERLOADS OCCURRED AT THE TREATMENT PLANT? IF SO, DID PERMIT VIOLATIONS OCCUR AS A RESULT?	□ Y □ N ⊠ NA □ Y □ N ⊠ NA
SECTION D - SELF-MONITORING	
PERMITTEE SELF-MONITORING MEETS PERMIT REQUIREMENTS. \square S \boxtimes M \square U \square NA (FURTHER EXPLANDETAILS:	NATION ATTACHED <u>Yes</u>).
1. SAMPLES TAKEN AT SITE(S) SPECIFIED IN PERMIT.	\boxtimes Y \square N \square NA
2. LOCATIONS ADEQUATE FOR REPRESENTATIVE SAMPLES.	\square Y \boxtimes N \square NA
3. FLOW PROPORTIONED SAMPLES OBTAINED WHEN REQUIRED BY PERMIT.	\boxtimes Y \square N \square NA
4. SAMPLING AND ANALYSES COMPLETED ON PARAMETERS SPECIFIED IN PERMIT.	\boxtimes Y \square N \square NA
5. SAMPLING AND ANALYSES PERFORMED AT FREQUENCY SPECIFIED IN PERMIT.	\boxtimes Y \square N \square NA
6. SAMPLE COLLECTION PROCEDURES ADEQUATE	\square Y \boxtimes N \square NA
a) SAMPLES REFRIGERATED DURING COMPOSITING.	\boxtimes Y \square N \square NA
b) PROPER PRESERVATION TECHNIQUES USED.	\boxtimes Y \square N \square NA
c) CONTAINERS AND SAMPLE HOLDING TIMES CONFORM TO 40 CFR 136.3.	⊠ Y □ N □ NA
7. IF MONITORING AND ANALYSES ARE PERFORMED MORE OFTEN THAN REQUIRED BY PERMIT, ARE THE RESULTS REPORTED IN PERMITTEE'S SELF-MONITORING REPORT?	⊠Y□N □NA
SECTION E - FLOW MEASUREMENT	
PERMITTEE FLOW MEASUREMENT MEETS PERMIT REQUIREMENTS. DETAILS: USGS gage for Rio Grande and inline flowmeter for return flow	TION ATTACHED <u>NO</u>)
PRIMARY FLOW MEASUREMENT DEVICE PROPERLY INSTALLED AND MAINTAINED. TYPE OF DEVICE electromagnetic inline flowmeter	⊠Y□N □NA
2. FLOW MEASURED AT EACH OUTFALL AS REQUIRED.	\boxtimes Y \square N \square NA
3. SECONDARY INSTRUMENTS (TOTALIZERS, RECORDERS, ETC.) PROPERLY OPERATED AND MAINTAINED.	\square Y \square N \boxtimes NA
4. CALIBRATION FREQUENCY ADEQUATE. (DATE OF LAST CALIBRATION_ 11/6/17 by Great Southwest Meter Testing) RECORDS MAINTAINED OF CALIBRATION PROCEDURES. CALIBRATION CHECKS DONE TO ASSURE CONTINUED COMPLIANCE.	 □ Y □ N □ NA □ Y □ N ⋈ NA □ Y □ N ⋈ NA
5. FLOW ENTERING DEVICE WELL DISTRIBUTED ACROSS THE CHANNEL AND FREE OF TURBULENCE.	\square Y \square N \boxtimes NA
6. HEAD MEASURED AT PROPER LOCATION.	□ Y □ N ⊠ NA
7. FLOW MEASUREMENT EQUIPMENT ADEQUATE TO HANDLE EXPECTED RANGE OF FLOW RATES.	⊠ Y □ N □ NA
SECTION F – LABORATORY	
PERMITTEE LABORATORY PROCEDURES MEET PERMIT REQUIREMENTS. S M U NA (FURTHER EXPLANA) DETAILS: Turbidity and pH are performed in the field	TION ATTACHED No)
1. EPA APPROVED ANALYTICAL PROCEDURES USED (40 CFR 136.3 FOR LIQUIDS, 503.8(b) FOR SLUDGES)	⊠ Y □ N □ NA

SECTION F - LAR	SECTION F - LABORATORY (CONT'D)							
2. IF ALTERNATIVE	2. IF ALTERNATIVE ANALYTICAL PROCEDURES ARE USED, PROPER APPROVAL HAS BEEN OBTAINED							
3. SATISFACTORY C	CALIBRATION AND MA	AINTENANCE OF INST	TRUMENTS AND EQUI	PMENT.		\boxtimes S \square M \square U	□ NA	
4. QUALITY CONTR	OL PROCEDURES ADE	QUATE.				\boxtimes S \square M \square U	□ NA	
5. DUPLICATE SAM	PLES ARE ANALYZED.	. <u>10</u> % OF THE TIME	∃.			\boxtimes Y \square N	□ NA	
6. SPIKED SAMPLES	6. SPIKED SAMPLES ARE ANALYZED % OF THE TIME.							
7. COMMERCIAL LA	BORATORY USED.					\boxtimes Y \square N	□ NA	
LAB ADDRESS	LAB NAME BioAquatics LAB ADDRESS 2501 Mayes Rd Ste 100, Carrollton TX 75006 PARAMETERS PERFORMED WET							
SECTION G - EFI	FLUENT/RECEIVIN	G WATERS OBSE	RVATIONS.	S D M D U D NA	(FURTHER EXPLANA	ATION ATTACHED _	<u>NO</u>).	
OUTFALL NO.	OIL SHEEN	GREASE	TURBIDITY	VISIBLE FOAM	FLOAT SOL.	COLOR	OTHER	
001	none	none	light	none	none	none		
RECEIVING WAT	ER OBSERVATIONS	5: Observed at samplin	ng port on Sediment R	eturn Line (SRL) inside	the Sediment Remova	ıl Facility (SRF) buildi	ing (photo 3)	
SECTION H - SL	SECTION H - SLUDGE DISPOSAL							
SLUDGE DISPOSA DETAILS:	SLUDGE DISPOSAL MEETS PERMIT REQUIREMENTS. \square S \square M \square U \boxtimes NA (FURTHER EXPLANATION ATTACHED NO). DETAILS:							
1. SLUDGE MANA	GEMENT ADEQUATE 1	ΓΟ MAINTAIN EFFLUI	ENT QUALITY.			\square S \square M \square U \square	☑ NA	
2. SLUDGE RECOR	DS MAINTAINED AS R	REQUIRED BY 40 CFR	503.			\square S \square M \square U \boxtimes	☑ NA	
3. FOR LAND APPL	LIED SLUDGE, TYPE OI	F LAND APPLIED TO:	(e.g., FO	REST, AGRICULTURAL,	PUBLIC CONTACT SIT	ГЕ)		
SECTION I - SA	MPLING INSPECTI	ON PROCEDURES	(FURTHER EXPL	ANATION ATTACHED	<i>NO</i> _).			
1. SAMPLES OBTA	INED THIS INSPECTIO	N.				\square Y \square N	⊠ NA	
2. TYPE OF SAMPL	2. TYPE OF SAMPLE OBTAINED							
GRAB COMPOSITE SAMPLE METHOD FREQUENCY								
3. SAMPLES PRESERVED. □ Y □ N ⋈ NA								
4. FLOW PROPORTIONED SAMPLES OBTAINED. □ Y □ N ⋈ NA								
5. SAMPLE OBTAIN	NED FROM FACILITY'S	S SAMPLING DEVICE.				\square Y \square N	⊠ NA	
6. SAMPLE REPRE	SENTATIVE OF VOLUM	ME AND MATURE OF	DISCHARGE.			\square Y \square N	⊠ NA	
7. SAMPLE SPLIT V	VITH PERMITTEE.					\square Y \square N	⊠ NA	
8. CHAIN-OF-CUST	ODY PROCEDURES EM	MPLOYED.				\square Y \square N	⊠ NA	
	9 SAMPLES COLLECTED IN ACCORDANCE WITH PERMIT							

Compliance Evaluation Inspection Buckman Direct Diversion NPDES Permit No. NM0030848 Inspection Date: April 3, 2018 Further Explanations

INTRODUCTION:

On April 3, 2018, Jennifer Foote of the New Mexico Environment Department (NMED), Surface Water Quality Bureau (SWQB) conducted a Compliance Evaluation Inspection at the Buckman Direct Diversion drinking water treatment plant (BDD). The NPDES permit covers the discharge of sediment and river water back into the Rio Grande from the primary sedimentation treatment process. BDD has a design flow capacity to provide 15 MGD (million gallons per day) of drinking water to the City and County of Santa Fe, and is classified as a major discharger under the Federal Clean Water Act, Section 402, of the National Pollutant Discharge Elimination System (NPDES) permit program. The BDD facility started discharging to the river in November 2010. The average monthly discharge from September 2014 to February 2018 is .358 MGD, and the maximum daily discharge flow was 1.4 MGD in November 2014. BDD is assigned NPDES permit tracking number NM0030848 which regulates the discharge to the Rio Grande in the Rio Grande Basin in Segment 20.6.4.114 of the New Mexico Administrative Code (NMAC). This segment includes the designated uses of irrigation, livestock watering, wildlife habitat, marginal coldwater aquatic life, primary contact, and warmwater aquatic life; and public water supply on the main stem Rio Grande.

The NMED performs a certain number of CEIs for the U.S. Environmental Protection Agency (USEPA), Region VI, under the NPDES permit program, in accordance with the Federal Clean Water Act. USEPA uses these inspections to determine compliance with the NPDES permit program. This inspection report is based on information provided by the permittee's representatives, observations made by the NMED inspector, electronic DMRs, and records and reports kept by the permittee and/or NMED.

INSPECTION DETAILS:

Upon arrival at the facility, the inspector conducted an entrance interview with Ms. Daniela Bowman, Regulatory Compliance Officer, where she presented credentials and explained the purpose of the inspection. They toured the control room and accompanied Mr. Juan Portillo while he conducted the weekly sampling and testing. An exit interview was conducted with Ms.Bowman and Mr. Charles Vokes to present the preliminary findings of the inspection.

TREATMENT SCHEME:

The BDD diverts water from the Rio Grande, and depending on water needs, normally the BDD will operate at about one-half of full capacity. The facility will not divert from the river in three instances: 1) Due to the consideration for the endangered silvery minnow, when the river flow is low (below 150 cfs), the facility will stop pumping water, 2) when there is high turbidity in the river because sand and sediments cause problems with the water treatment membranes, and 3) when the facility receives early notification from Los Alamos National Labs regarding a storm event resulting in above five cubic feet per second at the bottom of Pueblo Canyon (at the convergence with the Rio Grande), BDD will shut down diversion.

Water intake operations are not continuous and are controlled by operators at the main BDD facility via a SCADA system. After water is drawn through the intake structure, it is pumped to the Sediment Removal Facility (SRF) building about a mile away, where the sand (about 40 % of total sediment) is mechanically separated by vortex turbines which run in parallel to remove sediments from the water. The water is then pumped to the main treatment plant, whose processes are not covered by this NPDES discharge permit. The concentrated sediment effluent generated from the gravity centrifuge process is collected in a sump at the SRF. The sump wastewater is batch discharged and returned to the Rio Grande. The discharge location to the Rio Grande (photo 2), is just downstream of the intake structure and utilizes a submerged diffuser. River flow is measured by a USGS gage just upstream of the diversion, effluent flow is measured by an inline flowmeter with a totalizer at the SRF.

FINDINGS AND OBSERVATIONS:

Section B- Reporting and Recordkeeping Evaluation: overall rating of Satisfactory **Permit Requirements:**

The permit states in Part III.D.11, Signatory Requirements:

All Reports required by the permit and other information requested by the Director shall be signed by a person described above or by a duly authorized representative of that person.

The permit states in Part III.C.5, Monitoring and records:

Monitoring must be conducted according to test procedures approved under 40 CFR Part 136

Observations:

Written authorization for signatory authority was not available at the time of the inspection. *Note: the written authorization was submitted to the EPA Director 4/24/18.*

Not all of the pH buffer bottles were properly labeled with the date they were opened.

Section D – Self-Monitoring Evaluation – overall rating of Marginal.

Permit Requirements:

The permit states in Part I.A.1, Final Effluent Limits:

*8 Turbidity measurements are required on a weekly basis only on days when the river diversion is operating.

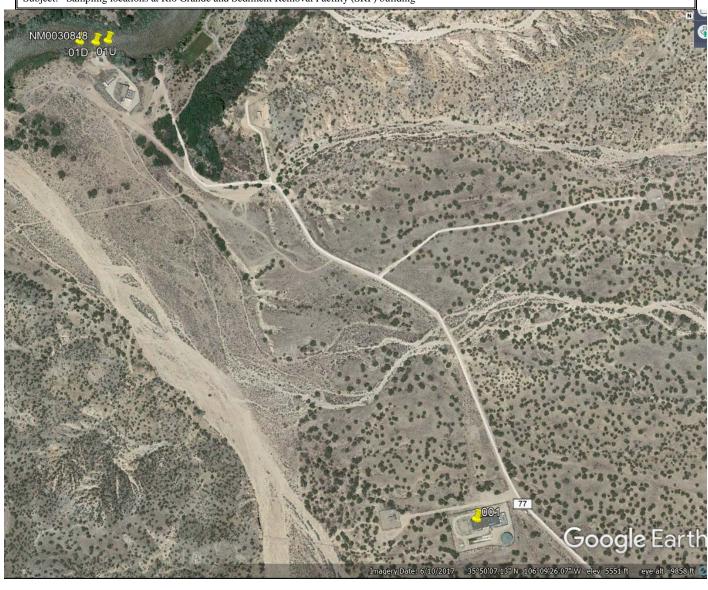
The permit states in Part III.C.2, Representative Sampling:

Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity.

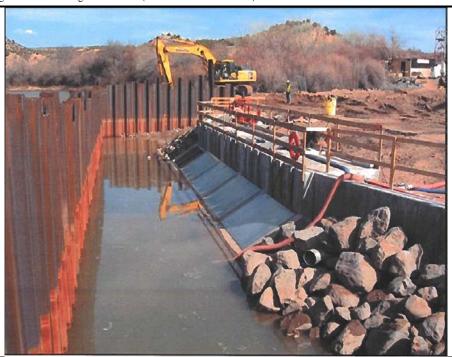
Findings:

Though the sampling procedure follows the permit requirement to make sure the diversion is operating that the time of sampling, due to the batch discharge process of the effluent, the plant may not be concurrently discharging at all times while the diversion is occurring. There is not a way to know when the discharge arrives at the river from the plant a mile away. Therefore, the sample collection at Outfall 01D may not occur while the discharge is actually reaching the river, which may result in turbidity sampling that is not representative of the effluent.

NMED/SWQB Official Photograph Log Photo # 1					
Photographer: Google Earth	Date: 6/10/2017	Time: n/a			
City/County: Santa Fe County	State: New Mexico				
Location: Buckman Direct Diversion					
Subject: Sampling locations at Rio Gra-	nde and Sediment Removal Facility (SRF) building	ng			



NMED/SWQB Official Photograph Log Photo # 2						
Photographer: Buckman Direct Diversion Date: unknown-approx. 2010/2011 Time: unknown						
City/County: Santa Fe County	State: New Mexico					
Location: Buckman Direct Diversion						
Subject: grey pipe on right is outfall during cor	Subject: grey pipe on right is outfall during construction (which is now underwater)					



NMED/SWQB						
Official Photograph Log						
	Photo # 3					
Photographer: Jennifer Foote	Date: 4/3/2018	Time: 3:43pm				
City/County: Santa Fe County	State: New Mexico					
Location: Buckman Direct Diversion						
Subject: discharge observation at sample	ng port 001 on Sediment Return Line (SRL) in	side the Sediment Removal Facility (SRF) building				



NMED/SWQB Official Photograph Log Photo # 4					
Photographer: Jennifer Foote	Date: 4/3/2018	Time: 3:20pm			
City/County: Santa Fe County		State: New Mexico			
Location: Buckman Direct Diversion					
Subject: Sampling location 01U-upstream of intake					



NMED/SWQB Official Photograph Log Photo # 5						
Photographer: Jennifer Foote	Time: 3:22pm					
City/County: Santa Fe County		State: New Mexico				
Location: Buckman Direct Diversion						
Subject: Sampling location 01D-downstream of	Subject: Sampling location 01D-downstream of outfall (visible in stream above sampler)					

